

Application No. 09/681,753

RD-28169

REMARKS

Claims 1 to 9, 14 to 20, 26 and 35 to 40 are pending. Claims 13 and 21 to 25 are canceled without prejudice or disclaimer. New claims 35 to 40 are based on the canceled claims and on the specification examples. Amendments to claims 2, 3, 6 and 7 address minor text errors.

I. 35 U.S.C. §101 REJECTION

Claims 1 to 9 and 13 to 26 were rejected under 35 U.S.C. §101. The Office Action states that "the claimed invention is directed to non-statutory subject matter" The Office Action refers to MPEP 2106 that relates to "mathematical algorithms."

35 U.S.C. 101, entitled "Inventions patentable" provides that "[w]hoever invents or discovers any new and useful process... may obtain a patent...." Applicants claim "[a] 'method' 'to conduct an experiment' (emphasis added), not an algorithm.

Arguments of the PTO relating to this objection refer to a *mathematical* algorithm.¹ "A method to conduct an experiment" is a "new and useful process,"

¹ Indeed any PTO arguments relating to a "mathematical algorithm" are incorrect since *State Street Bank & Trust v. Signature Financial Group*, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and represent incorrect examination that has been rejected by the MPEP:

It is essential that patent applicants obtain a prompt yet complete examination of their applications. Under the principles of compact prosecution, each claim should be reviewed for compliance with every statutory requirement for patentability in the initial review of the application, even if one or more claims are found to be deficient with respect to some statutory requirement. Thus, Office personnel should state all reasons and bases for rejecting claims in the first Office action. Deficiencies should be explained clearly, particularly when they serve as a basis for a rejection. Whenever practicable, Office personnel should indicate how rejections may be overcome and how problems may be resolved. A failure to follow this approach can lead to unnecessary delays in the prosecution of the application.

Prior to focusing on specific statutory requirements, Office personnel must begin examination by determining what, precisely, the applicant has invented and is seeking to patent, and how the claims relate to and define that invention. (As the courts have repeatedly reminded the Office: "The goal is to answer the question 'What did applicants invent?' " *In re Abele*, 684 F.2d 902, 907, 214 USPQ 682, 687. Accord, e.g., *Arrhythmia Research Tech. v. Corazonix Corp.*, 958 F.2d 1053, 1059, 22 USPQ2d 1033, 1038 (Fed. Cir. 1992).) Consequently, Office personnel will no longer begin examination by determining if a claim recites a "mathematical algorithm." Rather they will review the complete specification, including the detailed description of the

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specifically listed as a 35 U.S.C. §101 category of invention. The rejection of claims 1 to 9 and 13 to 26 under 35 U.S.C. §101 must be withdrawn

II. 35 U.S.C. §112, SECOND PARAGRAPH REJECTION

Claims 1 to 9 and 13 to 26 were rejected under 35 U.S.C. §112, second paragraph.

The PTO states:

... the confusion lies in the claims language because the claim implies that the physical steps of CHTS are somehow tied to a Latin Square model, rather than the space being designed by the model and then and [sic, an] experiment conducted.

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The PTO mischaracterizes the claims. The claims do not "impl[y] that the physical steps of CHTS are somehow tied to a Latin Square model." The claims *state* that "the CHTS method comprises defining a first experimental space by structuring the levels according to a Latin Square strategy." The claim statement is a clear and unambiguous statement of the step of defining the first experimental space.

The Office Action continues:

Claim 13 leads to further confusion in this matter because there are different steps for the CHTS method. Does the experiment comprise Latin Square models or does it comprise formulating a combinatorial library? The question is which method does applicant intend? Clarification of the virtual versus the physical steps is requested.

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The claims *state* that "the CHTS method comprises defining a first experimental space by structuring the levels according to a Latin Square strategy." Only an

invention, any specific embodiments that have been disclosed, the claims and any specific, substantial, and credible utilities that have been asserted for the invention.

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experimental space is defined by the Latin Square strategy according to the specified requirements of the generic claim 1.

The Office Action continues:

Claims 2 and 4 recite limitations of the probability values, such as high, medium, and low, and limitations on the method of claim 1. Does applicant intend the claim to limit the probability values or does applicant intend to limit the method to assignment by a client or investigator? Clarification is requested.

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A clerical error has been corrected in claim 2. Otherwise, claims 2 and 4 are written in conventional claim language to cover any of "assigning a high probability value, medium probability value or low probability value" "for each of the estimated interactions." According to the language of claim 4, "an investigator *and* a client" (emphasis added), "determine a probability value to be assigned."

Claim 3 has been amended to correct a clerical error. The amendment should overcome the 35 U.S.C. §112, second paragraph basis for rejection of this claim.

The Office Action continues:

Claim 9 recites the phrase "an adjustable definition model". It is not clear from the claim or the specification what this means. Does the model somehow relate to the experimental space? Is the model the actual experimental space? What is the model defining?

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However, claim 9 does not recite "an adjustable definition model." Claim 9 recites an "adjustable definitional model" (emphasis added), which is described in the specification, at paragraphs [0011] and [0018] and is exemplified in the examples.

"The claims and read in light of the specification need only apprise those skilled in the art of the scope of the invention." *Hybritech v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1387, 231 USPQ 81, 94, 95 (Fed. Cir. 1986), *cert. denied* 480 US 947 (1987). The claims as amended now apprise those skilled in the art of the scope of the invention.

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The rejection of claims 1 to 9 and 13 to 26 under 35 U.S.C. §112, second paragraph should be withdrawn.

III. 35 U.S.C. §103(a) REJECTION

Claims 1 to 9 and 13 to 26 were rejected under 35 U.S.C. §103(a) over Agrafiotis et al., Reddington et al. (Science 280, pp 1735-1737 (1998)) and Milliken et al. (Analysis of Messy Data Volume I: Designed Experiments, Chapman and Hall Publishing, pp 47 and 61 (1992)).

A. IMPROPER COMBINATION OF REFERENCES

The Agrafiotis et al., Reddington et al. and Milliken et al. references are not properly combinable. The rejection is based on a selective picking and choosing of features in a secondary reference, without any basis in the references for doing so. The rejection is supportable only through hindsight. *See In re Deuel*, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995).

To establish a prima facie case of obviousness based on a combination of references, the PTO must provide an:

...objective teaching... [that] would lead [one skilled in the art] to combine the relevant teachings of the references." *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)

....

... The Board [PTO] must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious." *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

In re Lee, 277 F.3d 1338, 1343, 61 USPQ 2d 1430, 1433-1434 (Fed. Cir. 2002).

In response to this important requirement of law, the Office Action only states:

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It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention would [sic] to combine the teachings of Agrafiotis et al. and Reddington et al. and the Latin Square model of Milliken. Agrafiotis provides the motivation to do so at column 17, where he states that other suitable metrics (besides those in the invention) may be used for the statistical analysis (lines 65-67).

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But why would one skilled in the art conclude from this statement that "defining a first experimental space [of a CHTS]" could be accomplished by the particularly claimed "Latin Square strategy"? One skill in the combinatorial chemistry art would not be led to the Milliken statistical text by an unspecific "other suitable metrics" statement, especially in view of the unpredictability of the chemical arts. See *In re Marzocchi*, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971). Furthermore, claims 18 to 20 and 26 (and new claims 35 to 40) relate to catalyst discovery by combinatorial chemistry. Catalyst discovery is an "arduous and rather unpredictable trial and error process," *Agnew. Chem. Int. Ed.*, 40, pp 312-329, at 312 (2001). The PTO is required to consider unpredictability, (MPEP 2144.08) but has not so in the Agrafiotis et al. - Milliken et al. text combination rejection.

Further, the December 17, 2003 Office Action fails to address the combination of Agrafiotis et al. and Reddington et al. In this respect, the PTO is requested to allow the claims or issue a non-final Office Action correctly addressing the combinations of references issue and restarting the period for response.

The Office Action fails to provide the required *In re Lee* "logical and rational" reasoning to combine the references. The rejection of claims 1 to 9 and 13 to 26 under 35 U.S.C. §103(a) over Agrafiotis et al., Reddington et al. and Milliken et al. should be withdrawn.

B. NO PRIMA FACIE CASE OF OBVIOUSNESS

Further even improperly combined, the references do not establish a *prima facie* case of obviousness. "A *prima facie* case of obviousness is established when the

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teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art...." *In re Rijckaert*, 28 USPQ2d 1955, 1956 (Fed. Cir. 1992).

Even improperly combined, the references do not teach or suggest: (1) "assigning a high probability value, medium probability value or low probability value" "by a client or investigator" (claim 2); (2) assigning a "high probability value, medium probability value or low probability value of each positive interaction" "for each of the estimated interactions" (claim 3); (3) "an investigator and a client who benefits from results from the CHTS experiment in concert determin[ing] a probability value to be assigned," (claim 4); (4) "assigning values"... "for each of the estimated interactions," (claim 5); (5) "assigning 0.6 to about 0.99 value," "0.2 to about 0.59 value," or about 0.01 to about 0.19 value," (claim 6); (6) "assigning 0.7 to about 0.9 value," about 0.2 to about 0.5 value" and "about .05 to about 0.15 value," (claim 7); (7) "repeating a CHTS method step and an adjusting probabilities step until a best set of levels is selected," (claim 8); (8) "constructing an adjustable definitional model to represent the estimated interactions and assigned probabilities," (claim 9); (9) "the experimental space factors comprise reactants, catalysts and conditions"; (10) "determining the chemical experimental space according to a full factorial design for [a] next iteration," (claim 13); or (10) "a reactant or catalyst at least partially embodied in a liquid and effecting the CHTS method comprises contacting the reactant or catalyst with an additional reactant at least partially embodied in a gas, wherein the liquid forms a film having a thickness sufficient to allow a reaction rate that is essentially independent of a mass transfer rate of additional reactant into the liquid to synthesize products that comprise the results," (claim 26).

Additionally, the improperly combined references do not establish a *prima facie* case of obviousness with respect to new claims 35 to 40. Reddington et al. does not teach or suggest catalysts.

"If examination... does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent." *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). "When the reference cited by the examiner fail to establish a

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prima facie case of obviousness, the rejection is improper and will be overturned." *In re Deuel*, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). The references do not establish a *prima facie* case of obviousness of (1) to (14) (claims 2 to 9, 13 and 21 to 26. The rejection of claims 2 to 9, 13 and 21 to 26 should be withdrawn.

IV. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1 to 9, 14 to 20, 26 and 35 to 40 are allowable. Reconsideration and allowance are requested.

Should the Examiner believe that any further action is necessary in order to place this application in condition for allowance, she is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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